EXPLANATION OF SIGNIFICANT DIFFERENCES
for the
Bonneville Power Administration
Ross Complex
Vancouver, Washington

INTRODUCTION

This document presents an Explanation of Significant Differences (ESD) for two Records of Decision (RODs) for the BPA Ross Complex. The Bonneville Power Administration (BPA), the United States Environmental Protection Agency (EPA), and the Washington State Department of Ecology (WDOE) signed these RODs. The RODs addressed by the ESD are:

1. OUA ROD, May 6, 1993, addressing surface contamination
2. OUB ROD, September 29, 1993,addressing groundwater and contamination at depth.

This ESD, prepared in accordance with Section 117(c) of CERCLA and 40 CFR 300.435(c)(2)(I), documents significant differences to the selected remedies in the RODs. In summary, this ESD clarifies the institutional control requirements for individual sites within these RODS as well as establishes the general requirements that BPA's Ross Complex will undertake to ensure effective institutional controls for these individual sites. The WDOE supports the need for this ESD.

This ESD will become part of the Administrative Record for the Ross Complex. The Administrative Record is located at 5411 NE Hwy. 99; Vancouver; Washington, (360) 418-2554. This ESD will also be available at the Information Repository at the Vancouver Regional Library located at 1007 East Mill Plain Blvd., Vancouver, Washington (360) 695-1566

SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS AND SELECTED REMEDY

The BPA Ross Complex is an active 250-acre installation located in Clark County Washington. The site is located approximately 2.7 miles north of the Columbia River and 1.7 miles east of Vancouver Lake. The site is bordered to the north by Cold Creek Canyon, a Burlington Northern Railroad right-of-way, NE Minnehaha Street and to the east and south by a residential neighborhood. Burnt Bridge Creek borders the site to the southwest and west. Highway 99 and Interstate 5 borders the site to the west. The two streams, which border the site, flow into Vancouver Lake.

The site is an active facility that has been owned and operated by BPA since 1939 to coordinate the distribution of hydroelectric power generated by the Federal Columbia

River Power System to regions throughout the Pacific Northwest. Since it's construction, the Site has provided research and testing facilities, maintenance and construction operations, and waste storage and handling operations for BPA. Maintenance activities at the Ross Complex have routinely involved handling transformer oils containing polychlorinated biphenyls (PCBs), and organic and inorganic compounds associated with the storage of preserved wood transmission poles, paints, solvents, and waste oils. Testing and laboratory activities include the use of heavy metals (such as mercury) and other organic and inorganic compounds.

The site was listed on the National Priorities List (NPL) in November 1989 based on the presence of volatile organic compounds (VOCs) in groundwater and the Site's proximity to the City of Vancouver's drinking water supply. As a result of the listing, and pursuant to a Federal Facility Agreement (FFA) signed by BPA, EPA and WDOE on May 1, 1990, BPA conducted a Remedial Investigation/Feasibility Study (RI/FS). The RI/FS was conducted to determine the nature and extent of contamination at the site and to evaluate alternatives for the clean up of contaminated areas. The RI field investigation began in the summer of 1991 and included the collection and chemical analysis of surface and subsurface soil, water, sediment, and groundwater samples.

Initially, the RI was designed to address the entire Site but during the summer of 1991, BPA, EPA and WDOE decided that the Site would be divided into two separate operable units (Units A and B) to facilitate the CERCLA process. Operable Unit A Remedial Investigation focused on an evaluation of surface soil contamination at a total of 19 waste units on the site. Operable Unit B Remedial Investigation focused on characterization of subsurface soils at the Fog Chamber Dump Trench Areas 1 and 2 and the Cold Creek Fill Area. The Operable Unit B investigation also included characterization of the shallow perched water table and deep groundwater aquifer beneath the site, and surface water and sediment in Cold Creek and Burnt Bridge Creek.

The Final RI/FS for OUA was issued on May 15, 1992 and the OUA ROD was signed on May 6, 1993. The Final RI/FS for OUB was issued on March 19, 1993 and the OUB ROD was signed on September 29, 1993.

All remedial actions for OUA have been completed. Treatment for PCP contaminated soil from the Wood Pole Storage Yard East was completed on November 30, 1995. PCB contaminated soil was removed from the Capacitor Test Lab in January 1994 and from the Ross Substation and Capacitor Yard in August 1995.

It was determined in the ROD that the remedial action for Operable Unit B would be limited to capping or covering the Fog Chamber Dump, Trench Area 1; the establishment of Institutional Controls at Fog Chamber Dump, Trench Area 2; and continued monitoring of volatile organic compounds in groundwater. Installation of the cap at the Fog Chamber Dump was completed in October of 1994. Groundwater

monitoring was discontinued in April 1996 when results demonstrated that conditions were stable and contaminants were nearly at or below Maximum Contaminant Levels (MCLs). The BPA Ross Complex was delisted from the NPL on September 23, 1996.

The Remedial Action Objectives and the major components of the remedies selected in these RODs are summarized in Attachment A, particularly as they relate to institutional controls and the need for institutional controls. The RODs should be consulted for a full description of the selected remedies.

DESCRIPTION OF THE SIGNIFICANT DIFFERENCE AND THE BASIS FOR THOSE DIFFERENCES

Institutional controls are being relied upon to protect human health and the environment at five locations at the Ross Complex. Where the RODs require institutional controls, the RODs lack detail on the site-specific institutional control including the geographic locations where such controls are required, the objectives of the control or restriction, and a description of the types of restrictions that need to be in place. The RODs are also silent on how these institutional controls will be implemented, maintained and monitored, both while the BPA has control of the property as well as what will happen if the property is transferred to other federal or to private ownership. This ESD clarifies the site-specific institutional control requirements and establishes the procedures for how BPA will implement maintain and monitor these site-specific requirements.

Although these institutional controls have been adhered to and remain protective of human health and the environment, the CERCLA five year review, completed in August, 1999, recommended that BPA develop a strategy to better provide for the long term administration, implementation and maintenance of institutional controls.

Site-Specific Institutional Control Requirements

Attachment B contains the revised site-specific institutional control requirements for every site/remedy listed on Attachment A that includes any form of institutional controls. These revised requirements clarify the geographic location where each IC is required, the objective of the control or restriction, and, as appropriate, a description of the types of restrictions that need to be in place.

In the process of reviewing the RODs for the Ross Complex, the agencies realized that there were two additional sites (Ross Substation Capacitor Yard and Cold Creek Fill) that require institutional controls for short and long term protection of human health and the environment. The remedy selected for these sites in the 1993 RODs had assumed that current and future land uses would be limited, but did not expressly require that those restrictions stay in place. This ESD adds the requirement that those restrictions stay in place. Attachment B also contains the site-specific institutional control requirements for these sites, as well as the reason why these controls are needed.

Facility-Wide Institutional Control Requirements

Attachment C contains the facility-wide institutional control requirements. Together, these facility-wide institutional control requirements establish the procedures and processes the Ross Complex will use to develop, implement, and monitor the site-specific institutional control requirements described above

Together, the remedial requirements described in Attachments B and C should result in remedial actions that improve the short-term and long-term protectiveness to human health and the environment.

The Applicable, Relevant and Appropriate Remedies (ARARs) established in the RODs are not modified by this ESD. This ESD is in furtherance of a new To-Be-Considered requirement, the EPA Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities, May 3, 1999.

Public Participation Activities

The BPA will publish a notice of availability and a brief description of this ESD in the local newspaper, the Vancouver COLUMBIAN.

For more information on this ESD the public may contact Ms. Elaine Stratton, Ross Complex Environmental Coordinator, at (360) 418-2554.

Affirmation of the Statutory Determinations

Considering the new information that has been developed as well as changes that have been made to the selected remedies, the BPA and the EPA believe that:

- The remedies remain protective of human health and the environment,
- The remedies comply with federal and state requirements that were identified in the RODs as applicable or relevant and appropriate to these remedial actions at the time of the original ROD, and
- The remedies are cost-effective.
- In addition, the revised remedies continue to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable for these sites.

Mark W. Maher
Senior Vice President
Transmission Business Line
Bonneville Power Administration

12-7-2000
Date

Michael F. Gearheard for
Director, Environmental Cleanup Office
Environmental Protection Agency, Region 10

1/18/01
Date

ATTACHMENT A

A Summary of the Remedial Action Objectives and Selected Remedial Actions from the RODs at the BPA Ross Complex

OUA ROD, May 6,1993

Three waste units; the Wood Pole Storage Area East, the Ross Substation and Capacitor Yard and the Capacitor Testing Lab were identified as requiring action under CERCLA.

Remedial Action Objectives

Reduce potential for occupational exposure by achieving soil cleanup levels specified by Washington State's Model Toxic Cleanup Act (MTCA).

Site	Contaminant	Soil Cleanup Level Specified
Wood Pole Storage Yard	Total HPAHs	1 ppm (MTCA Method A, residential)
	Pentachlorophenol	8 ppm (MTCA Method B, residential)
Ross Substation and Capacitor Yard	Total PCBs	10 ppm (MTCA Method A, industrial)
Capacitor Test Lab	Total PCBs	1 ppm (MTCA Method A residential)

Selected Remedies

Site	Remedy
Wood Pole Storage Yard	Ex-situ Solid-Phase Bioremediation with enhancements. If cleanup levels could not be met then soils were to be returned to yard, the yard capped and institutional controls applied
Ross Substation and Capacitor Yard	Excavation and off-site disposal. Industrial soil cleanup standard with fencing and deed restrictions
Capacitor Test Lab	Excavation and off-site disposal. Residential soil cleanup standard.

OUB ROD SEPTEMBER 29,1993

Two waste units; the Fog Chamber Dump Trench Area 1 and Fog Chamber DumpTrench Area 2 were identified as requiring action under CERCLA.

Remedial Action Objectives

The remedial action objectives for both OUB sites were:

- To prevent direct contact with contaminated soil
- To prevent future disturbance of contaminated soil
- To prevent surface water infiltration
- To create an area at the Fog Chamber Dump Trench Area that can be used by BPA for storage of heavy equipment

Selected Remedies

Site	Remedy
Fog Chamber Dump Trench Area 1	Installation of MFS cap with institutional controls. Institutional controls will limit access through the use of fencing, deed and land use restrictions
Fog Chamber Dump Trench Area 2	Institutional controls including deed and land use restrictions will be used to restrict land use activities that may disturb subsurface contamination

ATTACHMENT B

Revised Site-specific Institutional Control Requirements

OUA ROD, MAY 6, 1993

Wood Pole Storage Yard East.

This waste unit is located in the northeast corner of the Ross Complex. Of the 2,300 cubic yards of soil excavated from the pole yard, about 700 cubic yards failed to meet the ROD cleanup levels. After treatment, the soils that still exceeded cleanup levels were placed in a thin layer in the southwest corner of the pole yard. A clean cap was then applied over the entire 4.2-acre yard. Institutional controls are required only for the southwest corner of the yard that contains the residual contaminated soils. The institutional control objectives listed below must be met for this portion of the Wood Pole Yard.

- Ensure that the land use for that portion of the yard remains industrial
- Ensure that all disturbed or excavated soil from the site are properly categorized and disposed of, and that workers are protected during any such excavation or disturbance
- Ensure that these restrictions apply now and in the future, even if the Bonneville Power Administration no longer has control of the property
- Ensure that these restrictions will run with the land if the property is no longer federally owned

Comment: These institutional control requirements are needed to ensure site limitations that were assumed during the remedy selection are implemented and maintained.

Ross Substation and Capacitor Yard

This waste unit is located in the central portion of the Ross Complex. The capacitor yard is a small area in the southwestern corner of the substation yard. Due to the electrical hazards involved, the substation is enclosed in a security fence and access to the substation has always been strictly controlled. The Capacitor Yard itself is fenced off from the substation proper. All contaminated soil was removed down to non-detection levels except for a small area that interconnects capacitor banks. In that area, PCB-contaminated soil with up to 10 ppm (industrial cleanup level) was left in place. The institutional control objectives listed below must be met for this portion of the capacitor yard.

- Ensure that land use at the capacitor yard remains industrial
- Ensure that all disturbed or excavated soils at or from the site are properly

categorized and disposed of and that workers are protected during any such disturbance or excavation

- Ensure that these restrictions apply now and in the future, even if the Bonneville Power Administration no longer has control of the property.
- Ensure that these restrictions will run with the land if the property is no longer federally owned.

Comment: These institutional control requirements are needed to ensure use limitations that were assumed during remedy selection.

OUB ROD, SEPTEMBER 29, 1993

Fog Chamber Dump Trench Area 1.

The institutional control objectives listed below must be met at this waste unit which is located in the southeastern corner of the Complex. It is currently fenced and placarded.

- Prevent any disturbance to the cap, except as necessary for authorized O&M cap maintenance activities
- Prevent any current or future land uses that could jeopardize the integrity or life of the cap
- Notify the EPA prior to any development or redevelopment of the landfill site. The object of this notification is to ensure that the agencies concur that the development has been designed to retain the integrity of, and to avoid damage to, the cap
- Ensure that these restrictions apply now and in the future, even if Bonneville Power no longer has control of the property
- Ensure that these restrictions will run with the land if the property is no longer federally owned.

Comment: These IC requirements are to replace the requirement for deed restrictions stated in the 1993 ROD.

Fog Chamber Dump Trench Area 2

The institutional control objectives listed below must be met at this waste unit which is located immediately adjacent to Fog Chamber Dump Trench Area 1. The area is currently placarded.

- Restrict land use to prevent unauthorized soil disturbance.
- If any soils are disturbed, ensure that all disturbed or excavated soils at or from the site are properly categorized and disposed of, and that workers are protected during

any such disturbance or excavation

- Ensure that these restrictions apply now and in the future, even if the Bonneville Power Administration no longer has control of the property
- Ensure that these restrictions will run with the land if the property is no longer federally owned.
- Comment: These institutional control requirements are to replace the requirement for deed restrictions in the 1993 ROD.

Cold Creek Fill

The Cold Creek Fill area is located in the central portion of the Complex just North of the Ross Substation. This area consists of an engineered fill that has been continually compacted and graded over time with soil obtained from construction projects on the Complex. Based upon results in the RI it was determined that the existing conditions at this location were protective of public health and the environment, therefore remedial action was not necessary. Existing conditions included only limited isolated soil contamination between 5 and 25 feet below ground surface; relatively immobile contamination potential due to the types of contaminants; low permeability characteristics of the fill and access restricted by fencing and topographic considerations. The area is currently placarded at the entry gate.

To ensure that conditions that lead to the No Further Action determination do not change over time the following institutional control objectives are being added:

- Restrict land use to prevent soils from being disturbed.
- If disturbance of the soils becomes necessary, ensure that all disturbed or excavated soils at or from the site are properly categorized and disposed of, and that workers are protected during any such disturbance or excavation
- Ensure that these restrictions apply now and in the future, even if the Bonneville Power Administration no longer has control of the property
- Ensure that these restrictions will run with the land if the property is no longer federally owned.

Comment: These institutional control requirements are needed to ensure use limitations that were assumed during remedy selection are implemented and maintained.

ATTACHMENT C

Facility-wide Institutional Control Requirements

The Bonneville Power Administration (BPA)-Ross Complex has recently developed a comprehensive facility-wide approach for establishing, implementing, enforcing, and monitoring institutional controls at the facility. This approach contains procedures that will apply equally to BPA and contractor personnel who might undertake, approve or plan for any work on the Complex that might affect the future land use of these restricted areas. This facility-wide approach requires that:

- All CERCLA waste units containing any residual contamination will be clearly delineated and mapped. New facility maps will be prepared highlighting those locations subject to institutional controls. These maps will be logged into the engineering map vault at BPA headquarters and included in internal web pages for both the Environmental and Transmission Business Lines of BPA.
- Any digging, for any purpose, anywhere on the Complex by either BPA personnel or contractors, will require prior coordination with Ross Facilities Management. Facilities Management will be responsible for coordinating the dig permits. This will give us the broader assurance that an excavation will not threaten underground utilities.
- All areas that are governed by institutional controls will be permanently placarded. These signs will give notice that no digging is to take place without a dig permit.
- EPA and WDOE will be notified prior to any sale or lease of any property subject to institutional controls. Similarly, EPA and WDOE approval will be sought prior to any change in land use designation or restriction that may affect those areas subject to institutional controls.
- The existing Pollution and Abatement Clearance Process will be used as a means of coordination across business lines. The PAC process typically requires an environmental evaluation prior to excavation. The Project Manager or proposing office will be responsible for initiating the PAC request. The PAC report, issued by Pollution Control and Abatement through Facilities Management, will serve as the dig permit.
- The Environmental Coordinator for the Ross Complex will inspect all those locations subject to institutional controls on a quarterly basis as part of BPA's internal appraisal program. Those findings will be documented in an annual monitoring report to EPA.
- The Environmental Coordinator will immediately report any anticipated change in land use to EPA and WDOE.

- The Environmental Coordinator for the Ross Complex will serve as the point-of-contact with EPA on matters relative to CERCLA.

Within six months of signature of this ESD, the BPA Ross Complex will submit to EPA a monitoring report on the status of its institutional controls. The BPA will then submit an updated Institutional Control Monitoring Report to EPA at least annually thereafter. After the facility's comprehensive facility-wide approach is well established and the facility has demonstrated its effectiveness, the frequency of future monitoring reports may be modified subject to approval by EPA. The Institutional Control Monitoring Report at a minimum must contain:

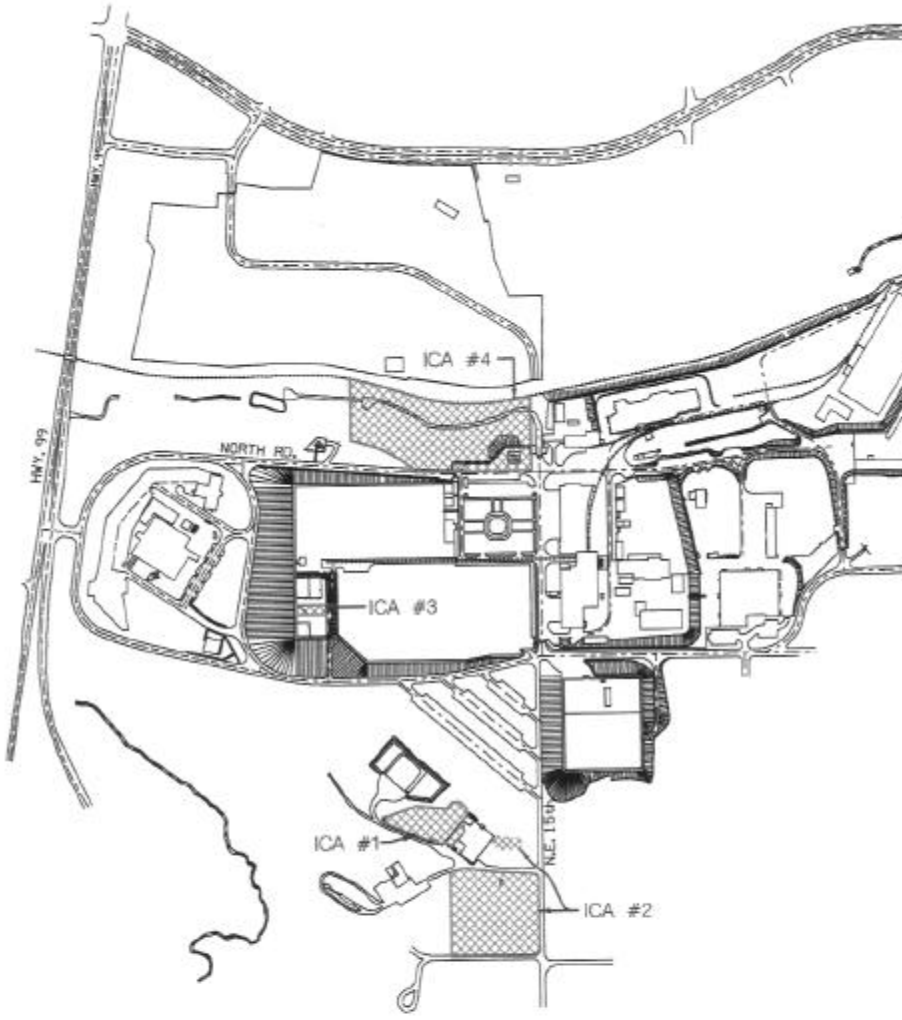
1. a description of how the Ross Complex is meeting the facility-wide institutional control requirements;
2. a description of how the Complex is meeting the Operable Unit-specific objectives, including results of visual field inspections of all areas subject to Operable Unit specific restrictions;
3. an evaluation of whether or not all the Operable Unit specific and facility-wide institutional control requirements are being met;
4. a description of any deficiencies and what efforts or measures have been or will be taken to correct problems.

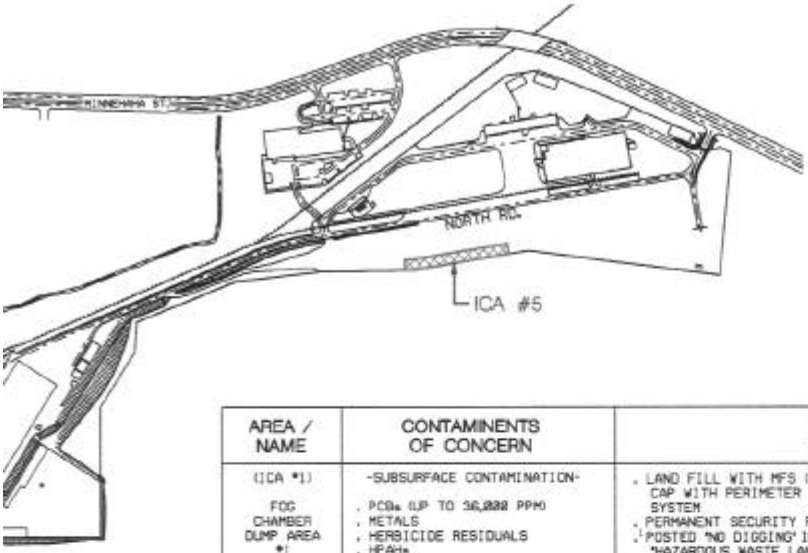
EPA review of the Institutional Control Monitoring Report will follow existing procedures for agency review of documents.

The BPA Ross Complex will notify EPA immediately upon discovery of any activity that is inconsistent with the Operable Unit-specific institutional control objectives for the site, or of any change in the land use or land use designation of a site addressed under item A (I). The facility will work together with EPA to determine a plan of action to rectify the situation. However, in the event the facility believes the activity creates an emergency situation, the facility can respond to the emergency immediately upon notification to EPA and need not wait for EPA input to determine a plan of action. The facility will also identify what went wrong with the institutional control process, evaluate how to correct the process to avoid future problems, and implement these changes after consulting with EPA.

The BPA Ross Complex will notify EPA at least six (6) months prior to any transfer, sale or lease of any property subject to institutional controls so that EPA can be involved in discussions to ensure that appropriate provisions to maintain effective institutional controls are included in the conveyance documents. If it is not possible for the facility to provide six month notification, then EPA will be notified as soon as possible but no later than 60 days prior to the transfer, sale or lease of any property subject to institutional controls.

The BPA Ross Complex will not delete or terminate any institutional control unless EPA has concurred in the deletion or termination.


ICA #4
HWY. 99
NORTH RD.
ICA #3
ICA #1
NE. 15th
ICA #2
SCALE
1" = 600'-0"
0
300
600
900 FT



AREA / NAME	CONTAMINENTS OF CONCERN	CONTROL MEASURES	SEE FIG#
(ICA #1) FOG CHAMBER DUMP AREA #1 .95 ACRE	-SUBSURFACE CONTAMINATION- . PCBs (UP TO 36,000 PPM) . METALS . HERBICIDE RESIDUALS . HPAHs	. LAND FILL WITH MFS (IMPERVIOUS) ENGINEERED CAP WITH PERIMETER DRAINAGE COLLECTION SYSTEM . PERMANENT SECURITY FENCE AROUND AREA .[1] POSTED "NO DIGGING" INSIDE OF FENCE, "HAZARDOUS WASTE LANDFILL" OUTSIDE FENCE . QUARTERLY INSPECTIONS OF CAP, PERIMETER FENCING AND PERIMETER DRAINAGE CLEANOUTS	FIG #1
(ICA #2) FOG CHAMBER DUMP AREA #2 =3.25 ACRE	-SUBSURFACE CONTAMINATION- . NON-PROCESS SOLID WASTES SUCH AS; WIRES, CABLES, LEAD SHEATHING . LEAD & OTHER METALS > STATE CLEANUP LEVELS . HPAHs	. 1-2 FOOT CLEAN FILL MATERIAL COVER .[1] LAND USE RESTRICTIONS ON ACTIVITIES WHICH MAY DISTRURB SUBSURFACE CONTAMINATION . QUARTERLY INSPECTIONS	FIG #1
(ICA #3) 230KV CAPACITOR DISCONNECTS .13 ACRE	-SURFICIAL GRAVEL AND SUBSURFACE CONTAMINATION- . PCBs <10 PPM	. RESTRICTED ENTRY .[1] RESTRICTIONS ON DIGGING AND NO CHANGE IN EXISTING LAND USE . QUARTERLY INSPECTIONS	FIG #2
(ICA #4) COLD CREEK FILL AREA 5.29 ACRE	-SUSPECTED SUBSURFACE CONTAMINATION- . PCB CONTAMINATED SOIL . METALS ABOVE BACKGROUND	. 5++ FOOT CLEAN FILL CAP .[1] RESTRICTIONS ON DIGGING . QUARTERLY INSPECTIONS	FIG #3
(ICA #5) WOOD POLE STORAGE AREA, EAST .47 ACRE	-SUBSURFACE CONTAMINATION- . HPAHs & PCP UP TO 10-15 PPM (1 PPM & 8 PPM CLEAN UP LEVELS RESPECTIVELY)	. 6 INCH GRAVEL CAP .[1] RESTRICTIONS ON DIGGING & LAND USE . QUARTERLY INSPECTIONS	FIG #4

[1] CONTACT BUILDING & GROUNDS MANAGER, OR ROSS ENVIRONMENTAL COORDINATOR PRIOR TO DISTURBING ANY SOIL.

NO.		W.O.	COMPUTER REVISION ONLY	BY	DATE	APPROVED
1		W.O.	ADDED APPROX .84 ACRES TO ICA #2	BCB	11/28/00	SH JRM

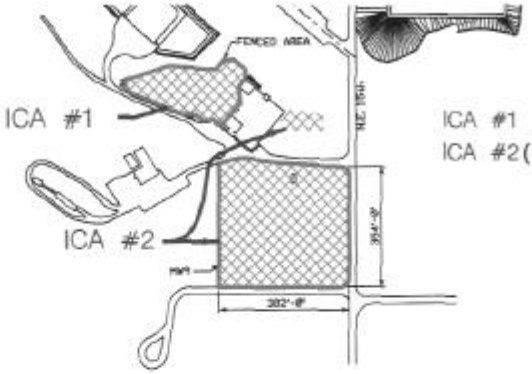
Drawn DC BOSCO
Envsp ES STRATTON
Chkd SD HUDELL
Appr JR MEYER
Date 6/12/00

UNITED STATES DEPARTMENT OF ENERGY
BONNEVILLE POWER ADMINISTRATION
HEADQUARTERS, PORTLAND, OREGON

ROSS COMPLEX INSTITUTIONAL CONTROL-AREA (ICAs) SITE PLAN

SERIAL | SOURCE | SIZE | SHEET | REVISION

FIGURE #1

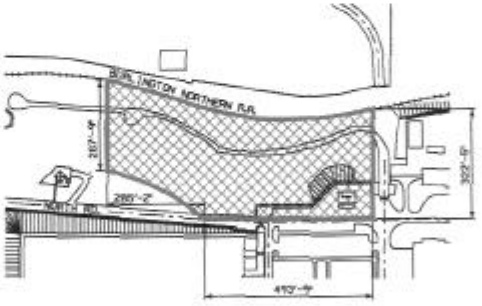


ICA #1 (.95 ACRE)
ICA #2 (≈3.25 ACRE)

ICA #1 & #2 FOG CHAMBER DUMP AREAS 1 & 2

SCALE: 1" = 400'

FIGURE #3

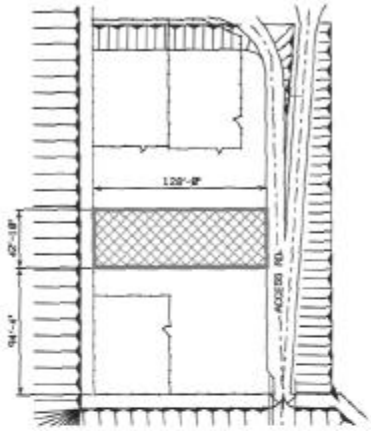


ICA #4 (5.29 ACRE)

ICA #4 COLD CREEK FILL AREA

SCALE: 1" = 400'

FIGURE #2

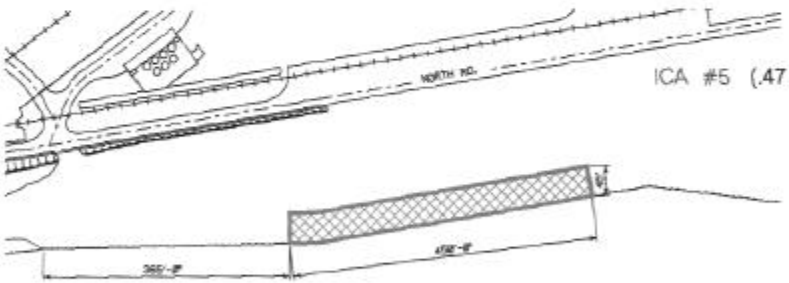


ICA #3 (.13 ACRE)

ICA #3 230KV CAPACITOR YARD DISCONNECTS

SCALE: 1" = 100'

FIGURE #4



ICA #5 (.47 ACRE)

ICA #5 WOOD POLE STORAGE AREA, EAST

SCALE: 1" = 200'

NO.	V.C.	COMPUTER REVISION ONLY	BY	DATE	APPROVED

Drawn: BC BOSCO
Chkd: SR STRATTON
Chkd: SD HUDILL
Appr: JR MEYER
Date: 6/12/98

UNITED STATES DEPARTMENT OF ENERGY
BONNEVILLE POWER ADMINISTRATION
HEADQUARTERS, PORTLAND, OREGON

ROSS COMPLEX
INSTITUTIONAL CONTROL AREA
(ICAs)
FIGURES #1 - #4